Emergence of Newport9+, a Highly Resistant Strain of *Salmonella* Newport in the United States

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Background: An estimated 1.4 million *Salmonella* infections occur in the United States annually. Antimicrobial resistance contributes to the human health burden of *Salmonella* and threatens the utility of commonly used agents, including expanded-spectrum cephalosporins. In 2000, *Salmonella* Newport was the third most common serotype in the United States, accounting for 9% of the estimated 1.4 million *Salmonella* infections.

Methods: Since 1996, participating public health laboratories have forwarded every 10th human non-typhoidal *Salmonella* isolate to the National Antimicrobial Resistance Monitoring System (NARMS) at CDC for antimicrobial susceptibility testing. Partial-range minimum inhibitory concentrations (MIC) for 17 antimicrobial agents were determined using a semiautomated broth microdilution system (Sensititre®).

Results: Between 1996-2001, 8046 non-typhoidal *Salmonella* isolates were tested; 525 (6%) were *S*. Newport. Of the 525 *S*. Newport isolates, 77 (15%) were resistant to ampicillin, amoxicillin/clavulanate, cefoxitin, ceftiofur, cephalothin, chloramphenicol, sulfamethoxazole, streptomycin, and tetracycline (Newport9+). Among the 77 Newport9+ isolates, 60 (78%) had decreased susceptibility to ceftriaxone, 13 (17%) were resistant to kanamycin, 8 (10%) to trimethoprim/sulfamethoxazole, and 5 (6%) to gentamicin; none were resistant to ciprofloxacin or amikacin. The prevalence of Newport9+ among *S*. Newport isolates was 0% (0 of 99) in 1996-1997, 1% (1 of 78) in 1998, 17% (17 of 99) in 1999, 22% (27 of 124) in 2000, and 25% (32 of 125) in 2001. Newport9+ was identified in 17 sites. The median age of Newport9+ patients was 27.5 (<1-81 years); 55% were female.

Conclusion: *Salmonella* Newport (Newport9+), with resistance to expanded-spectrum cephalosporins, has emerged in the United States. Further studies are needed to determine the clinical significance of Newport9+, but clinicians need to consider the increasing prevalence of Newport9+ as they select therapies for severe salmonellosis.

Suggested citation:

Gupta A, Stevenson J, Crow C, McClellan J, Barrett T, Whichard J, Angulo F, and the NARMS Working Group. Emergence of Newport9+, a Highly Resistant Strain of *Salmonella* Newport in the United States. Infectious Disease Society of America. Chicago, IL. 2002.